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EXAMINER	
BRINICH, STEPHEN M	
ART UNIT	**PAPER NUMBER**
2625	

NOTIFICATION DATE	DELIVERY MODE
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	10/571,014	ENCRENAZ ET AL.	
	Examiner	Art Unit	
	STEPHEN M. BRINICH	2625	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *24 November 2009*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *83-92* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *83-92* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed 11/24/09 have been fully considered but they are not persuasive.

Re claims 83, 87, & 89, Applicant argues (11/24/09 Remarks: page 5, line 11 - page 9, line 5, particularly page 5, line 27 - page 6, line 19; page 6, line 21 - page 7, line 6; page 7, lines 15-22; page 8, line 15 - page 9, line 5) that the Prior Art of record fails to teach or suggest the printing of the recited machine-readable and non-machine-readable inks in a **single** printer. In support of this argument, Applicant references Page 5, lines 3-6 (part of Applicant's described Prior Art, which was relied upon in the previous Office Action):

> We recommend that you use process black to print the pattern. Print on top of the pattern, on the other hand, must be printed with ink that is transparent to the pen, that is, the ink must have very low absorption of light of these wavelengths.

However, it is unclear how this recitation, which is relied upon for the feature of using machine-readable and non-machine-readable inks, undercuts the teachings (see below) of a single printer in other references, e.g. Rumph et al (US 64429948) and Nelson et al (US 6132024). In response to applicant's arguments

against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

Re claim 83, Applicant argues (11/24/09 Remarks: page 7, lines 7-15; page 8, lines 9-13) that the Clouthier et al reference (US 5949964) is not directed to the half-toning of a machine-readable pattern as claimed.

However, the teaching of Clouthier et al relied upon in the previous Office Action is the by-pass of a half-toning process (Clouthier et al: column 5 lines 1-15 and Figure 1, item 36). Also, the recitations of claim 83 describe the routing of data representative of content color to a half-toning process, with no recitation specifically requiring the half-toning of a machine-readable pattern.

Re claim 87, Applicant argues (page 7, line 24 - page 8, line 8) that Nelson fails to teach or suggest the recited a machine-pattern or configuration of a digital pen.

In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208

USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

Re dependent claims 84-86, 88, & 90-92, Applicant argues that these claims are allowable for the same reasons as parent claims 83, 87, & 89.

Applicant's arguments re claims 83, 87, & 89 have been addressed above.

Claim Rejections - 35 USC § 103

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

3. Claim 83 is rejected under 35 U.S.C. 103(a) as being unpatentable over Rumph et al (US 64429948) in view of Applicant's described Prior Art and Clouthier et al (US 5949964).

Re claim 83, Rumph et al discloses (Abstract; column 9, lines 50-65; column 29, lines 24-29; Figures 2, 17, & 34) a print control system adapted to control a single digital printer, said system being adapted to route data representative of content color to (a) a color separation process, (Figure 34, Component 1714, Color Transformation, column 9, lines 58-65) and to (b) a half-toning process, (Figure 34: Optimized Halftone Generators, 1712, column 9, lines 50-56) and to (c) a masking

process, (Figure 17, Steps S480-S1070, Process Masking Operator column 29, lines 24-29).

Rumph et al does not specifically teach the recited elements of having a first machine-readable ink and a second ink, or inks, that is/are not machine-readable at the same wavelength as said first ink, and said system being configured to cause said printer to print documents having both, (a) machine-readable pattern adapted to enable a digital pen to acquire data to enable its position in said pattern to be determined, and (b) human-discernable content that is not read by said pen in use.

Applicant's described Prior Art teaches the feature of having a first machine-readable ink and a second ink, or inks, that is/are not machine-readable at the same wavelength as said first ink, (Applicant's described Prior Art: paragraphs 0016-0018; substitute black can be used as an invisible ink to the infrared pen reader, and process black can be used to give a high contrast for the pen camera), said system being configured to cause said printer to print documents having both (Applicant's described Prior Art: Paragraph (0015-0018)), and (a) machine-readable pattern adapted to enable a digital pen to acquire data to enable its position in said pattern to be determined, (Applicant's described Prior Art: Figure 1, item 12,

Paragraph (0004)) and (b) human-discernable content that is not read by said pen in use, (Applicant's described Prior Art, Human discernable content, Figure 3, item 46 and 48, see paragraph 0013). Rumph et al and Applicant's described Prior Art are combinable because they are from the same field of endeavor namely image processing. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to have further modified the combination of Rumph et al by the teachings of Applicant's described Prior Art to include Claim 83.

The suggestion/motivation for doing so would have been to: provide both machine visible and invisible ink toner as taught by Applicant's described Prior Art in paragraphs (0015-0018).

Therefore it would have been obvious to combine Rumph et al with Applicant's described Prior Art to obtain the invention as specified in Claim (83).

Rumph et al and Applicant's described Prior Art do not specifically disclose that said system is adapted to route data representation of a pattern so as to by-pass a half-toning process.

Clouthier et al teaches a system is adapted to route data representation of a pattern so as to by-pass a half-toning process. (Clouthier et al; column 5, lines 1-15 and Figure 1,

item 36; illustrates data by-passed through halftone module #26 via bypass to the print engine #28, column 5, lines 11-15).

Rumph, Applicant's described Prior Art and Clouthier et al are combinable because they are from the image processing field.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to have further modified the combination of Rumph, Applicant's described Prior Art by the teachings of Clouthier et al to include Claim 83.

The suggestion/motivation for doing so would have been to: Improve optimizing rendering, as taught by Clouthier et al in column 5, lines 1-17.

Therefore it would have been obvious to combine Rumph, Applicant's described Prior Art with Clouthier et al to obtain the invention as specified in Claim 83.

4. Claim 84 is rejected under 35 U.S.C. 103(a) as being unpatentable over Rumph et al (US 64429948) in view of Applicant's described Prior Art and Clouthier et al (US 5949964) as applied to claim 83 above, and further in view of Mostafavi (US 5642444).

Re claim 84, Rumph et al, Applicant's described Prior Art, and Clouthier et al do not disclose a control system according to claim 83 with the additional element of the control system

being adapted to route data representative of a pattern so as to by-pass a masking process.

Mostafavi discloses a control system adapted to route data representative of a pattern so as to by-pass a masking process. (Figure 5, item 20 and column 6, lines 45-50).

Rumph et al, Applicant's described Prior Art, Clouthier et al and Mostafavi are combinable because they are from the field of image processing.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to incorporate the additional element of the control system being adapted to route data representative of a pattern so as to by-pass a masking process.

The suggestion/motivation for doing so would have been to provide improved image processing as taught by Mostafavi (column 2, lines 8-9).

Therefore it would have been obvious to combine Rump, Applicant's described Prior Art, Clouthier et al with Mostafavi to obtain the invention as specified in claim 84.

5. Claims 85-86 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rumph et al (US 64429948) in view of Applicant’s described Prior Art and Clouthier et al (US 5949964)

as applied to claim 83 above, and further in view of Funahashi (US 2002/0036645) and Cox (U.S. Pat. 5140686).

Regarding Claim 85, Rumph, Applicant's described Prior Art, Clouthier et al do not describe a control system adapted to route data representative of content through a linearization process or routing data representation of pattern so as to by-pass said linearization process.

Funahashi discloses the feature of routing data representative of content through a linearization process (Figure 1, items 12a, 12b, 12c; paragraph 0040; see “Content Data Conversion Process”).

Rumph et al, Applicant's described Prior Art, Clouthier et al, and Funahashi and are combinable because they are from the field of image processing.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to have further modified the combination of Rumph, Applicant's described Prior Art, Clouthier et al, by the teachings of Funahashi to include the feature of routing data representative of content through a linearization process.

The suggestion/motivation for doing so would have been to allow differences in colors to be identified even when colors

are displayed on a gray scale as taught by Funahashi in the Abstract.

Therefore it would have been obvious to combine Rumph, Applicant's described Prior Art, Clouthier et al, with Funahashi to obtain the invention as specified in claim 85.

Cox teaches the feature of routing data representation of pattern so as to by-pass said linearization process of routing data representation of pattern so as to by-pass said linearization process. (column 3, lines 66-67 and Column 4, lines 1-5; column 14, lines 9-15; Figure 9, item 81 Pattern Data Bypass).

Rumph et al, Applicant's described Prior Art, Clouthier et al, Funahashi and Cox and are combinable because they are from the field of image processing.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to have further modified the combination of Rumph, Applicant's described Prior Art, Clouthier et al, and Funahashi by the teachings of Cox to include the feature of routing data representation of pattern so as to by-pass said linearization process of routing data representation of pattern so as to by-pass said linearization process.

The suggestion/motivation for doing so would have been to: Increase speed of processing as taught by Cox (Abstract).

Therefore it would have been obvious to combine Rumph, Applicant's described Prior Art, Clouthier et al, and Funahashi with Cox to obtain the invention as specified in claim 85.

Re claim 86, Cox teaches a control system adapted to route data representative of pattern so as to by-pass a masking process (Figure 9, item 81) and adapted to route data representation of pattern so as to by-pass said linearization process. (Figure 9, item 81; column 14, lines 9-15; Pattern Data By-pass around linearization LUT). Funahashi further discloses routing data representative of content through a linearization process, (Figure 1, items 12a, 12b, 12c; Content Data Color Correction, Paragraph 0040).

6. Claim 87 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nelson et al (US 6132024) in view of Applicant’s Admitted Prior Art and Clouthier et al.

Re Claim 87, Nelson et al discloses a method of printing documents on a single digital printer (Figure l, Printer; Column 6, lines 10-11). The method comprises digitally printing the content and pattern onto the document using the same digital printer, (Abstract), the printer having a first ink which is not machine-readable at a particular wavelength of electromagnetic

radiation and a second ink that is machine-readable at the said particular wavelength, (Claim 1: Visible and Invisible inks printed), and printing the content with the first ink (Human visible) and not the second ink (Claim 1: A means for printing visible content using visible ink), at least where said content overlies said pattern, and printing the pattern using the second ink. (Abstract: using ink that is visible to the sensor printing a fill pattern).

Nelson et al does not specifically disclose the features of (a) Machine-readable position-determining pattern adapted to enable a machine reader to determine its position in a pattern space, and (b) Human-discernable content adapted not to be read by said machine reader.

Applicant's described Prior Art discloses the features of (a) Machine-readable position-determining pattern adapted to enable a machine reader to determine its position in a pattern space, (Figure 1, item 12; paragraph 0004) and (b) Human-discernable content adapted not to be read by said machine reader (Applicant's described Prior Art of record Figure 3, items 46 & 48; paragraph 0013). Nelson and Applicant's described Prior Art and are combinable because they are from the same field of endeavor Image Processing.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to have further modified the combination of Nelson by the teachings of Applicant's described Prior Art to include the features of (a) Machine-readable position-determining pattern adapted to enable a machine reader to determine its position in a pattern space, and (b) Human-discernable content adapted not to be read by said machine reader.

The suggestion/motivation for doing so would have been to: Provide both machine visible and invisible ink toner as taught by Applicant's described Prior Art in paragraphs 0015-0018.

Therefore it would have been obvious to combine Nelson with Applicant's described Prior Art to obtain the invention as specified in claim 87.

Nelson and Applicant's described Prior Art do not disclose the feature wherein data representative of content is half-toned and wherein data representation of pattern bypasses a half-toning process.

Clouthier et al teaches the feature of halftoning data representative of content (Clouthier et al: Fig.1, #26; Halftoning; Co1.4, lines 60-63) and wherein data representation of pattern bypasses a half-toning process. (Figure 1, item 36;

column 5, lines 1-15; Illustrates data by-passed through halftone module #26 via bypass to the print engine 28).

Nelson, Applicant's described Prior Art and Clouthier et al are combinable because they are from the same field of endeavor Namely Image Processing.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to have further modified the combination of Nelson, Applicant's described Prior Art by the teachings of Clouthier et al to include the feature of data halftoning.

The suggestion/motivation for doing so would have been to provide an improved method and apparatus for halftoning of images (Clouthier et al in column 2, lines 21-23).

Therefore it would have been obvious to combine Nelson, Applicant's described Prior Art with Clouthier et al to obtain the invention as specified in Claim 87.

7. Claims 88-92 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nelson et al (US 6132024) in view of Applicant’s Admitted Prior Art and Clouthier et al as applied to claim 87 above, and further in view of Rumph et al.

Re claim 88, Nelson et al, Applicant's described Prior Art and Clouthier et al do not disclose the feature wherein data

representative of content is operated upon by a masking process, and data representation of pattern bypasses a masking process.

Rumph et al discloses (Rumph et al; column 34; lines 47-62; Figure 24; S1070-S1710) the feature wherein data representative of content is operated upon by a masking process and data representation of pattern bypasses a masking process.

Nelson, Applicant's described Prior Art, Clouthier and Rumph et al are combinable because they are from the field of image processing.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to have further modified the combination of Nelson, Applicant's described Prior Art, and Clouthier by the teachings of Rumph et al to include the feature wherein data representative of content is operated upon by a masking process, and data representation of pattern bypasses a masking process.

The suggestion/motivation for doing so would have been to provide an optimized printing system as taught by Rumph et al in the Abstract.

Therefore it would have been obvious to combine Nelson, Applicant's described Prior Art, and Clouthier et al with Rumph et al to obtain the invention as specified in claim 88.

Re claim 89, Nelson et al, Applicant's described Prior Art and Clouthier et al do not disclose processing the content data differently from the pattern data during data processing performed to print the document.

Rumph et al discloses (column 2, lines 43-48) processing the content data differently from the pattern data during data processing performed to print the document.

Applicant's described Prior Art, Nelson et al, and Rumph et al and are combinable because they are from the field of image processing.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to have further modified the combination of Applicant's described Prior Art, Nelson et al by the teachings of Rumph et al to include the feature of processing the content data differently from the pattern data during data processing performed to print the document.

The suggestion/motivation for doing so would have been to provide an optimized printing system as described by Rumph et al in the Abstract.

Therefore it would have been obvious to combine Nelson et al, Applicant's described Prior Art, and Clouthier et al with Rumph et al to obtain the invention as specified in claim 89.

Re claim 90, Rumph et al discloses a method of printing according to claim 89 comprising using a single digital printer responsive to a print command from a user's processor, and the method comprising treating the pattern as text content in a printer driver, (Figure 34, item 1710; column 9, lines 43-45). Nelson et al further discloses (column 3, lines 20-25) printing the pattern using exclusively one ink that is readable by a machine at said non-visible wavelength, or exclusively using a plurality of inks that are readable at said non-visible wavelength and printing the content, at least that content which is superposed with said pattern, using exclusively an ink, or inks, that are not machine-readable at said non- visible wavelength.

Re claim 91, Rumph et al discloses a method of printing according to claim 89, the method comprising taking a RGB version of an image from a computer and isolating the pattern in its own color plane, optionally during a color separation process, content being printed with other available color planes not including said pattern color plane (column 33, lines 39-44 re using RGB, and preferred color transformation for converting into CMYK).

Re Claim 92, Clouthier discloses (column 5, lines 12-15, Bypassing the Halftone Module) that content color plane data

undergoes a half-toning and masking operation in order to determine what content, if any, is printed at each pixel of the printing operation, wherein pattern color plane data bypasses the half-toning operation.

Conclusion

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL.** See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

9. Any inquiry concerning the contents of this communication or earlier communications from the examiner should be directed to Stephen M. Brinich at 571-272-7430.

Any inquiry relating to the status of this application, entry of papers into this application, or other any inquiries of a general nature concerning application processing should be directed to the Tech Center 2600 Customer Service center at 571-272-2600 or to the USPTO Contact Center at 800-786-9199 or 571-272-1000.

The examiner can normally be reached on weekdays 8:00-5:30, alternate Fridays off.

If attempts to contact the examiner and the Customer Service Center are unsuccessful, supervisor Edward Coles can be contacted at 571-272-7402.

Faxes pertaining to this application should be directed to the Tech Center 2600 official fax number, which is 571-273-8300.

Hand-carried correspondence may be delivered to the Customer Service Window, located at the Randolph Building, 401 Dulany Street, Alexandria, VA 22314.

/S. M. B./

Examiner, Art Unit 2625

/Thomas D Lee/

Primary Examiner, Art Unit 2625